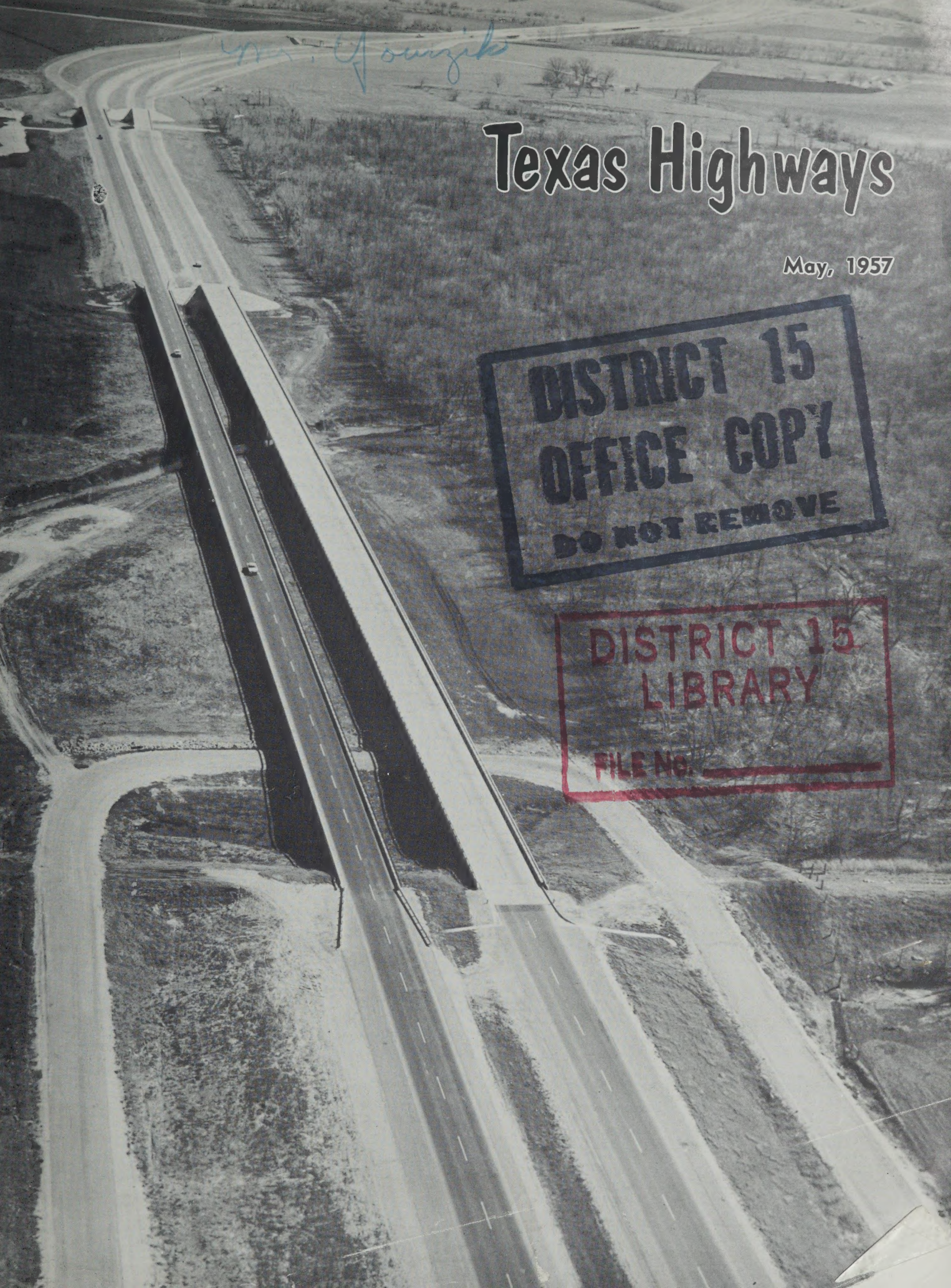

Texas Highways

May, 1957

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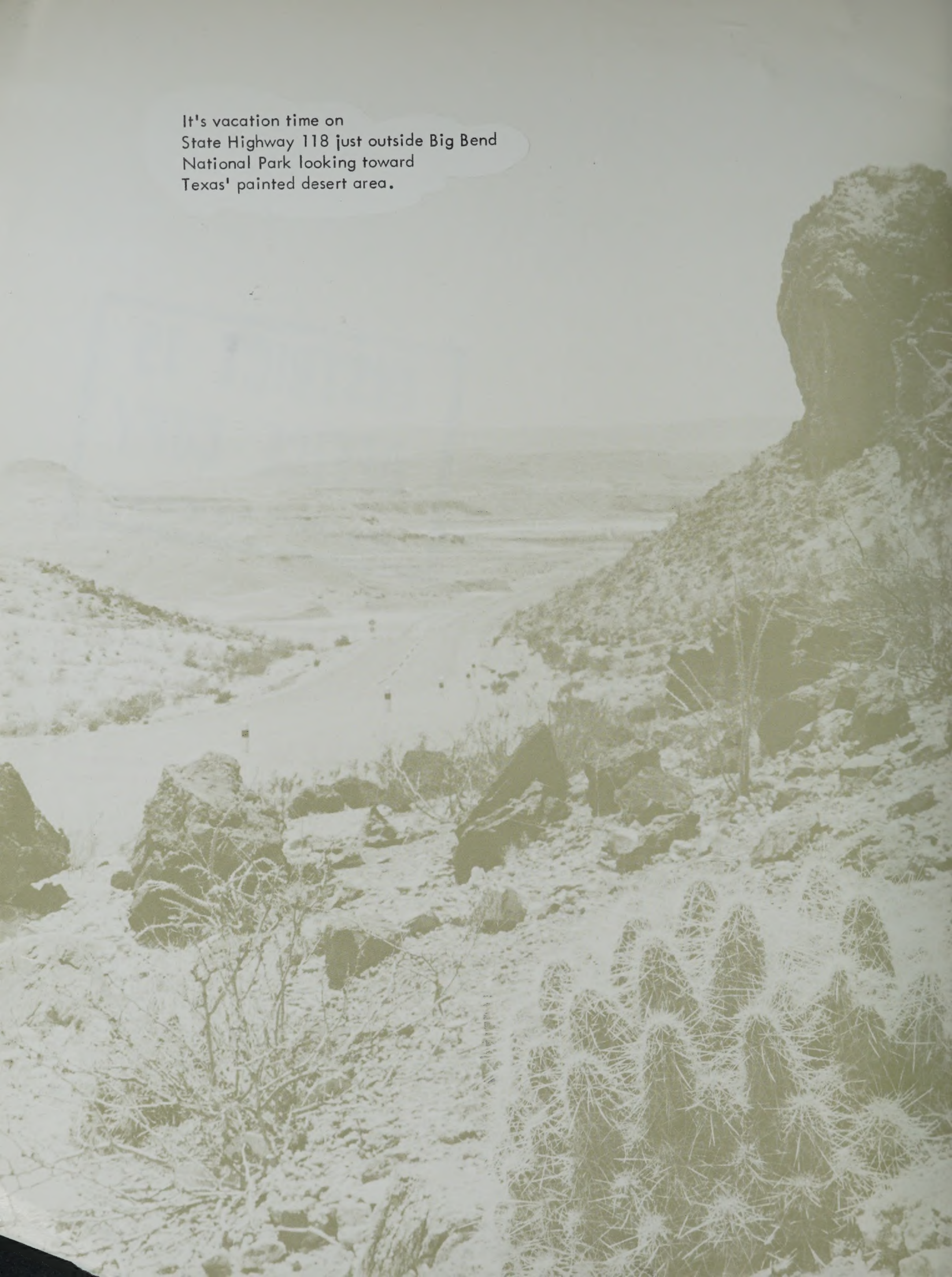

It's vacation time on
State Highway 118 just outside Big Bend
National Park looking toward
Texas' painted desert area.

Texas Highways

Volume 4 • Number 7

May, 1957

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Interstate and National

Texas now has 907 miles of divided highways either completed or under construction on the Interstate system. The whole Interstate System undertaking is the largest public works project the nation has ever initiated. Second in expenditures only to World War II, it will require a dozen years more before its completion. Forty-two state capitols will be connected, and all but 23 cities of 50,000 or more.

The year was 1806, the place a primitive trail leading west across the Appalachians. The lead driver of the covered wagon train shook his head in disbelief. There, in the midst of the wilderness, a gang of laborers was clearing the road of rocks and fallen trees. The incredulous driver called over to ask who had sent them here. When he found out, he was even more astounded. They were federal employees, sent to smooth the way for the settlers and their wagons. It was the United States Government's first major experiment in road building.

Just 150 years later, in Washington, D. C., an event took place which gave dramatic evidence of how far we have come in our determination to travel in comfort and style. On June 29, 1956, the President signed into law a Federal Highway Act, the most important phase of which provided for 41,000 miles of high-speed superhighways, to be known as the "Interstate and National Defense System."

Not since the bill for World War II was totaled up has anything nearly so costly crossed the horizon for the American people. However, unlike World War II, this project is of benign disposition from every standpoint. It will spread more than $33 billion dollars all over the map of the United States in the form of the most remarkable monument the American civil engineer has yet carved out of the Twentieth Century. Thirteen years will be needed to complete it; the effect on American life—if human calculations come true—will be felt for generations. Roads have that effect, and this particular colossus, which in engineering circles is referred to, for simplicity, as the "Interstate System," has been planned to proportions which will dwarf every previous public works program in the history of the country.

What will this mean to a Texan?

If he is a motorist or must travel on the job, the most heartening meaning may come in the area of traffic safety, where specialists figure he will be three times as safe in his travel as on present highways. Not only that, a cut in travel time by one-third on the average intercity trip is in the offing. No more steep-grade hills and hazardous curves, bumps and potholes, honking horns and crawling cars. Mr. Texas, and the tourists giving our state a once-over, will be clipping a mile a minute when they are on flat land portions

Over the entire thirteen-year period of building the Interstate and National Defense System, the cost for building materials will reach astronomical proportions. On a nation-wide scale a half million new jobs are expected to result. A down-the-line reaction has resulted from the "extra" dollars the Gargantuan project has been injecting into the Texas economy since last June.

Defense System

of the Interstate's two, four, six, or eight-lane highways. When lunch or a tankful of gas is needed, a conveniently spaced exit will route them off the highway in the direction of commercial establishments. Back on the Interstate, the motorist will skim along, breaking pace for nothing—not railroad crossings, stop lights, or stop signs; and—except in sparsely populated areas—no grade crossings.

Instead of stopping at city limits and funneling cars and trucks into already congested streets, the new roads will bypass or pass through them. The idea is that in Texas, and in every one of the other 47 states which link to the chain, theoretically,

A mile a minute clip will be quite easily achieved on flat land portions of the Interstate and National Defense System of Highways. In Texas—and in every one of the other 47 states which link to the chain—theoretically, the motorist may drive border-to-border and coast-to-coast without interruption.

the motorist may drive border to border and coast to coast without interruption. At this time, when construction of the highway colossus is just beginning, a prediction has been made that operating costs for automobiles will drop over one cent per mile, and for trucks, four cents.

What more will the Interstate System mean to a Texan?

It means there are already construction companies hiring men and buying materials from Texas manufacturers and using Texas banks, Texas railroads—the whole down-the-line economic reaction which naturally has resulted from the "extra" dollars the Interstate System has been injecting into the Texas economy since last June. There is yet much more to come during the twelve years ahead, because this state has a total of 2,905 miles to complete. During 1957 an $80.4 million total will trickle into the Texas economy from construction costs of the Interstate System alone.

On a nation-wide scale, a half-million new jobs are expected to result from the Interstate System. Women as well as men will be needed to help draw and process millions of blueprints, mainly for the 300,000 bridges. High school and college boys to help out on survey crews are two labor sources sure to be drawn upon, especially for summer work. More highway engineers may be one of the ends resulting from the experience of these young men on the Interstate in the company of professional engineers directing the construction.

There is always the giving, to balance the getting. This, too, is what the Interstate System means to a Texan.

He's been helping pay for it since last July 1 with every tire and gallon of gas he's bought. Increased federal taxes on trucks, and the vehicle excise tax are part of the payment plan. But federal taxes are just one time a Texan helps pay for the new highways. Each state must match one dollar for every $9 of federal money for the Interstate System. All states have their own methods of raising this, usually through the motorist. Texas primarily does its matching with the motor fuel tax and registration fees.

The big job is underway. Inevitably, almost every segment of American industry will benefit directly or indirectly from the vast highway program; and the greatest economic effect is yet to come, when the highways are put into use, stimulating traffic movement throughout the nation.

Yet the prime meaning — and the most critical—which the new highways could hold for a Texan is latent. This meaning is revealed in the word, "defense," which has been shortened out of the popular reference to the new highways in these days of peace. By law this program was designated the "Interstate and National Defense System." Every highway route will have been chosen to connect as directly as practicable the metropolitan areas and cities, the industrial centers, and major military installations of the United States, even joining this nation at suitable border points with the Dominion of Canada and Mexico. Rapidity of movement of large volumes of military traffic is what planning engineers have in mind. The most vital of all uses to which the highways may yet be put, therefore, is an uncertainty which must be reckoned with as realistically as is possible when humans attempt to project themselves into the future.

For now, tomorrow is bright indeed. From the settler in his covered wagon to the Sunday driver in his station wagon, Americans have always been restless, impatient, eager to be on the move. At last, to millions for whom the freedom to travel is both a necessity and a job, a new era dawns.

Judged by Texas Engineers

FIVE MOST BEAUTIFUL BRIDGES

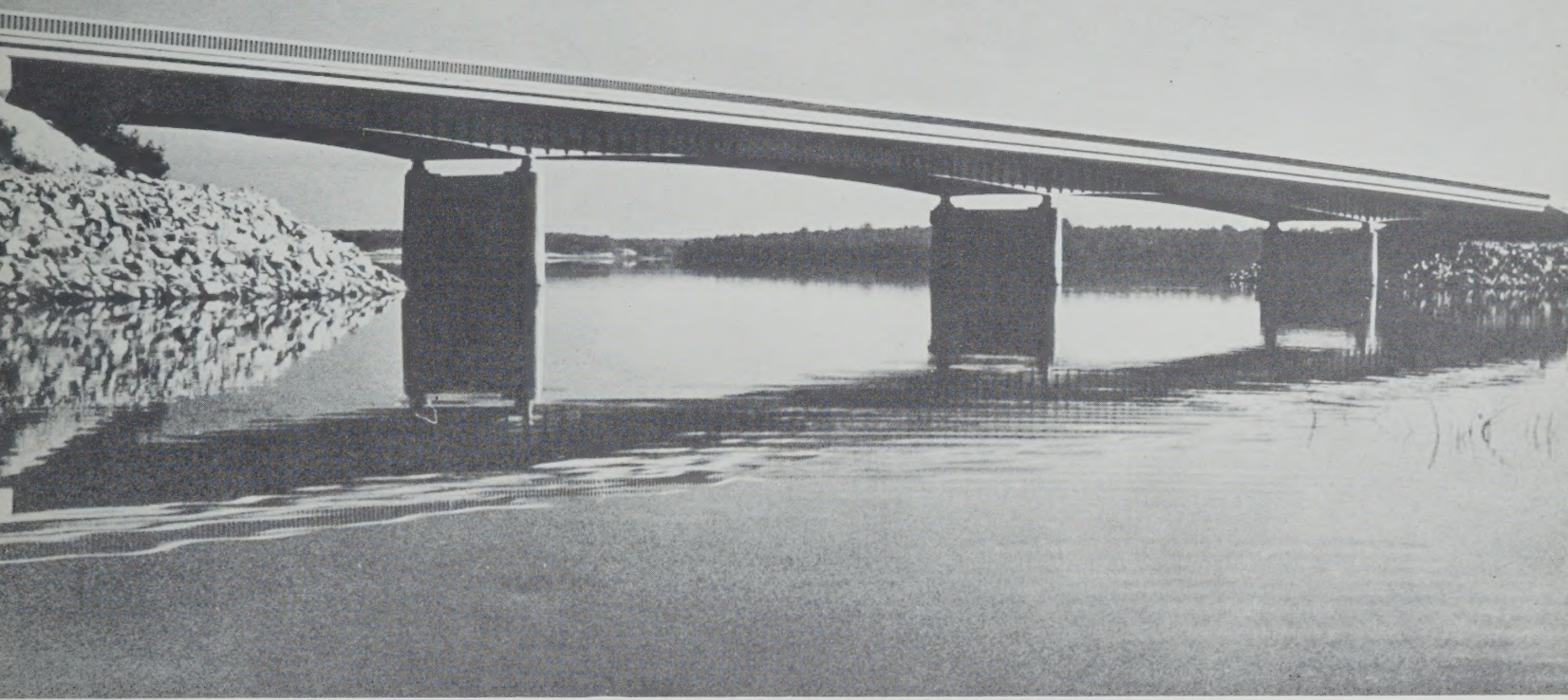
Their taste in pulchritude—that of bridges, specifically—was recently revealed by five engineers from the Bridge Division who, at the request of TEXAS HIGHWAYS, selected the five outstanding structures from a collection of pictures of prize-winning steel bridges all over the nation since 1928. Beauty, function, and design were the only three qualities the engineers had been asked to consider; so size and cost had no influence on the evaluation made by Emilio Cantu, Ocie R. Kluge, Robert L. Reed, E. A. Jelinek, and Charles J. Schneider.

Golden Gate Bridge, a comely twenty-year-old from San Francisco, tied for first place with the Morris Ferry Bridge, a youngster from Tennessee, in the professional eyes of the Texans. It is interesting to note that except for the Golden Gate, the choices made by the Texas engineers were of rather economical, small bridges, bearing out the fact the judges were keeping their professional eye in the direction of other attributes.

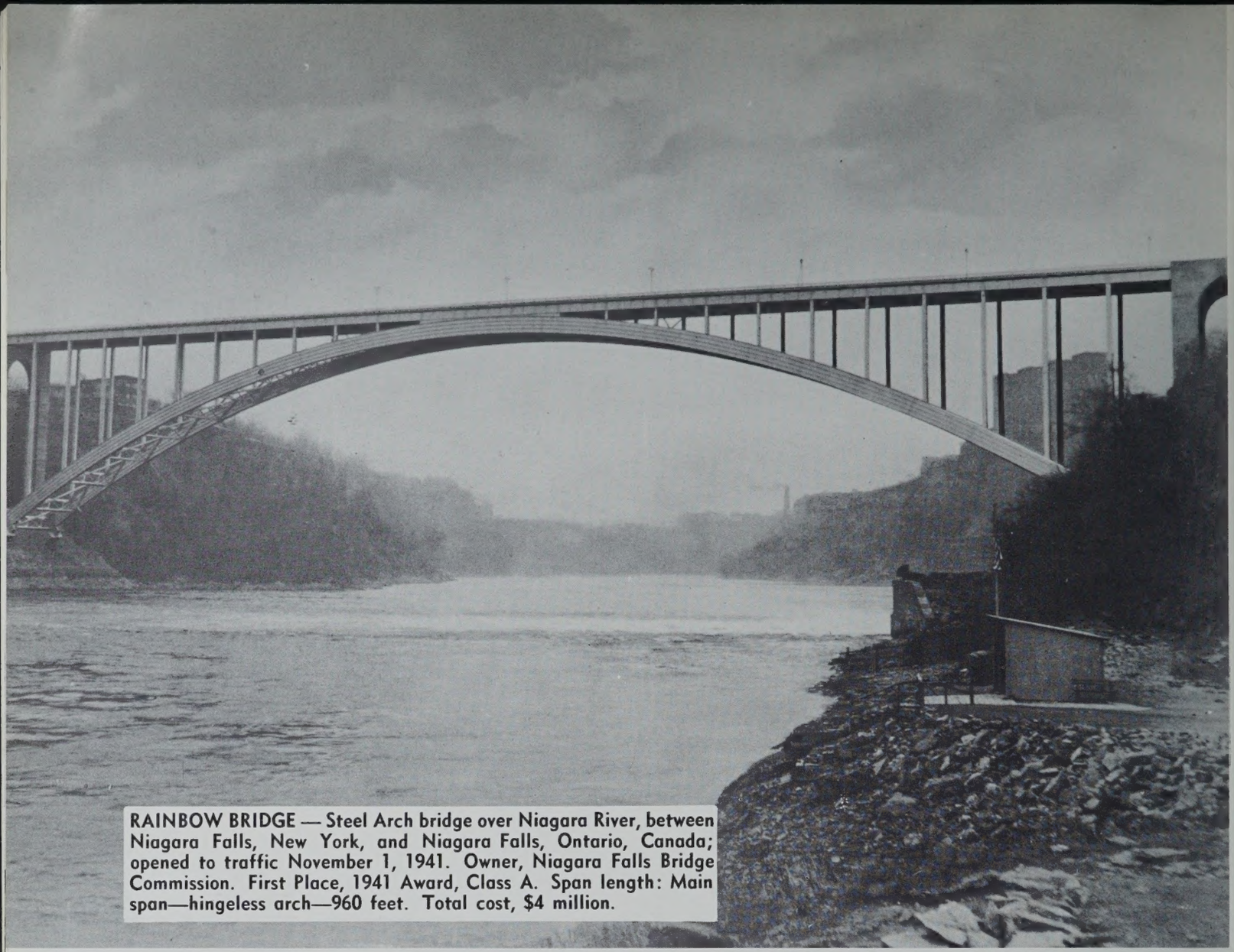
Here, then, is the complete list of the five bridges in the United States whose graces make a Texas bridge engineer stop and whistle: Golden Gate Bridge, San Francisco; Morris Ferry Bridge, Franklin County, Tennessee; Pecos River Railroad Bridge, Texas; Rainbow Bridge, from Niagara Falls, New York, to Niagara Falls, Ontario; and Robert Street Underpass, Fort Worth, Texas.

GOLDEN GATE BRIDGE — Suspension bridge from Fort Point to Lime Point across the Golden Gate at San Francisco, California; opened to traffic, May 27, 1937. Owners, Golden Gate Bridge and Highway District. First Place, 1937 Award, Class A. Span length: Main span, 4,200 feet c-c of towers; total length, 9,200 feet. Total cost, $27 million.

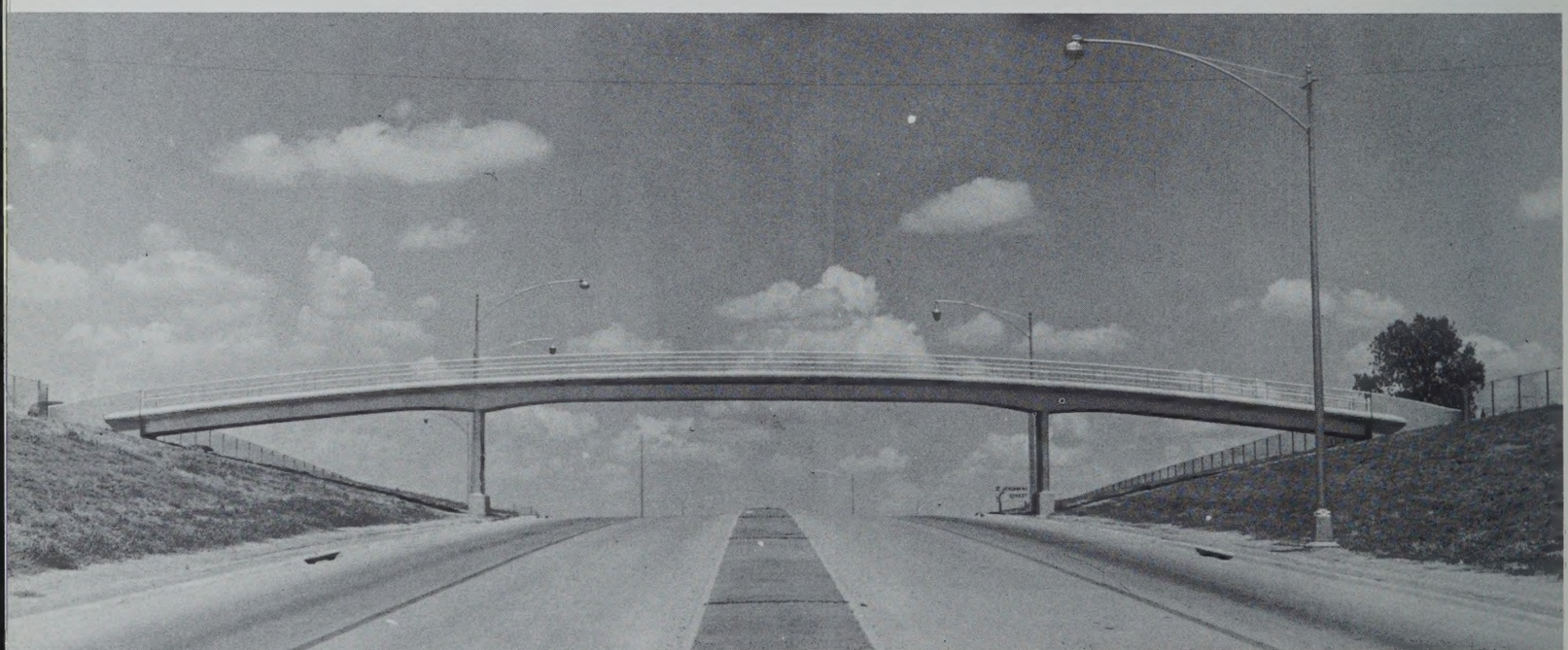
MORRIS FERRY BRIDGE — Plate girder bridge, Franklin County, Tennessee, owner Franklin County Highway Commission, Tennessee; opened to traffic, March 26, 1952; 1952 Award, Class III. Span lengths, two at 71 feet 6 inches, two at 105 feet. Total cost, $169,107.42.



PECOS RIVER BRIDGE — Continuous truss railroad bridge, Val Verde County, Texas; opened to traffic, December 21, 1944. Owner, Southern Pacific Lines in Texas and Louisiana; 1944 Award, Class II. Spans: 161 feet, 267 feet 6 inches, 374 feet 6 inches, 267 feet 6 inches, and 161 feet; two approach spans at 79 feet 6 inches. Total cost, $883,284.



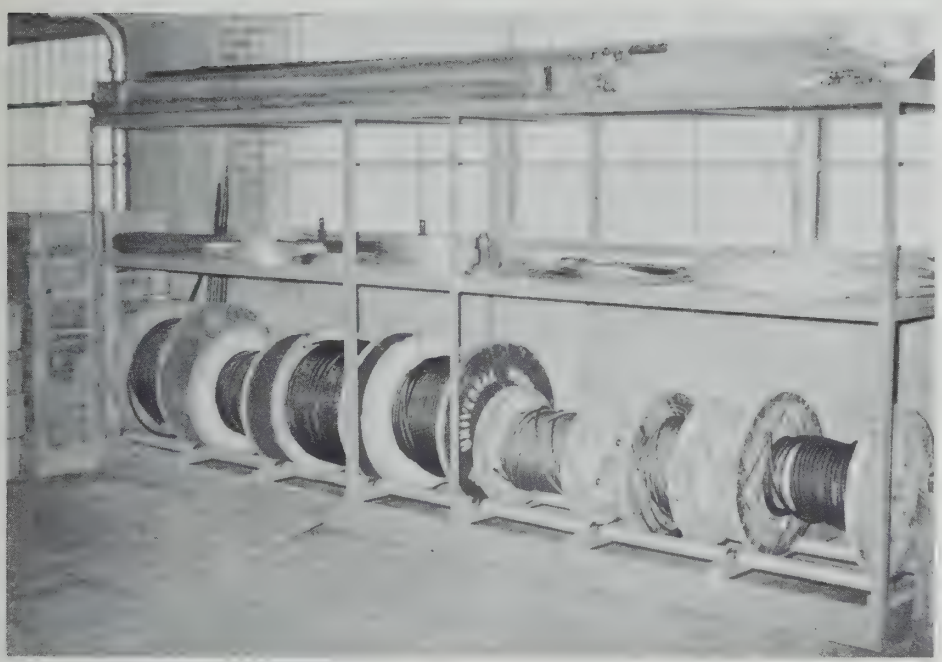
RAINBOW BRIDGE — Steel Arch bridge over Niagara River, between Niagara Falls, New York, and Niagara Falls, Ontario, Canada; opened to traffic November 1, 1941. Owner, Niagara Falls Bridge Commission. First Place, 1941 Award, Class A. Span length: Main span—hingeless arch—960 feet. Total cost, $4 million.



ROBERT STREET UNDERPASS — Pedestrian bridge over South Freeway, Fort Worth, Texas; opened to traffic, July, 1953. Owner, Highway Department, State of Texas; 1953 Award, Class III. Span length, two at 44 feet, one at 75 feet. Total cost, $11,117.

Cable and Cordage Rack

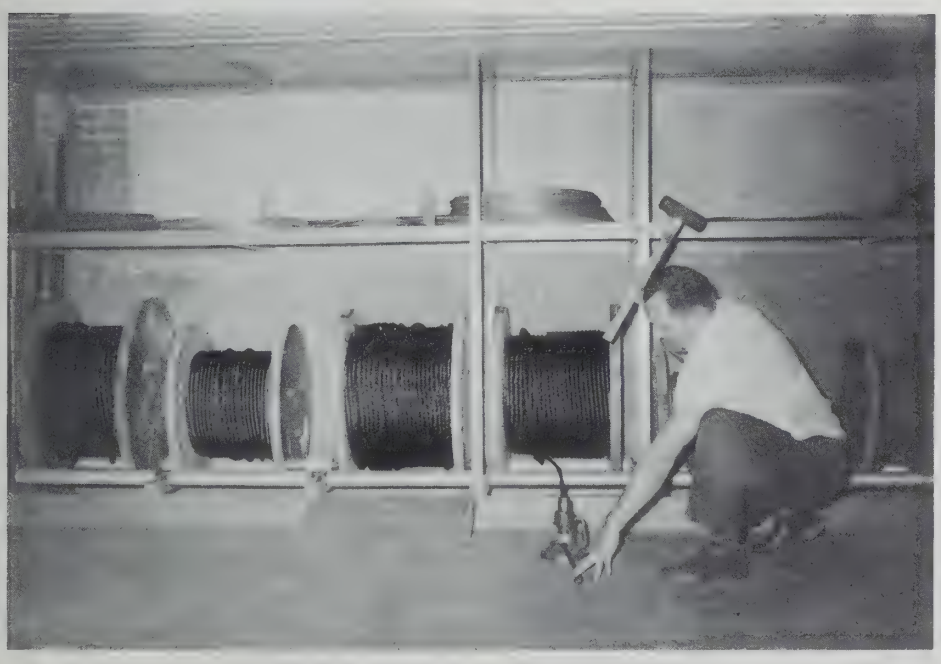
Frank Cawthon, District Engineer
District 18

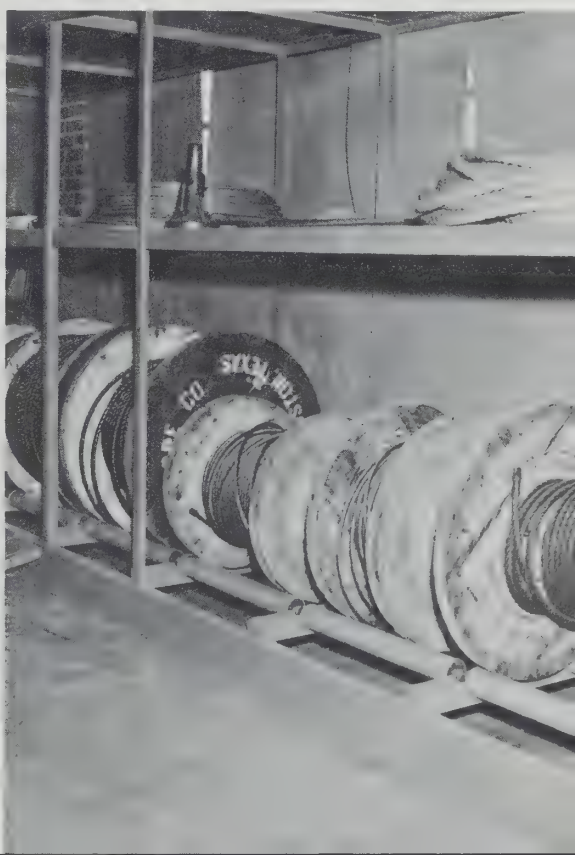


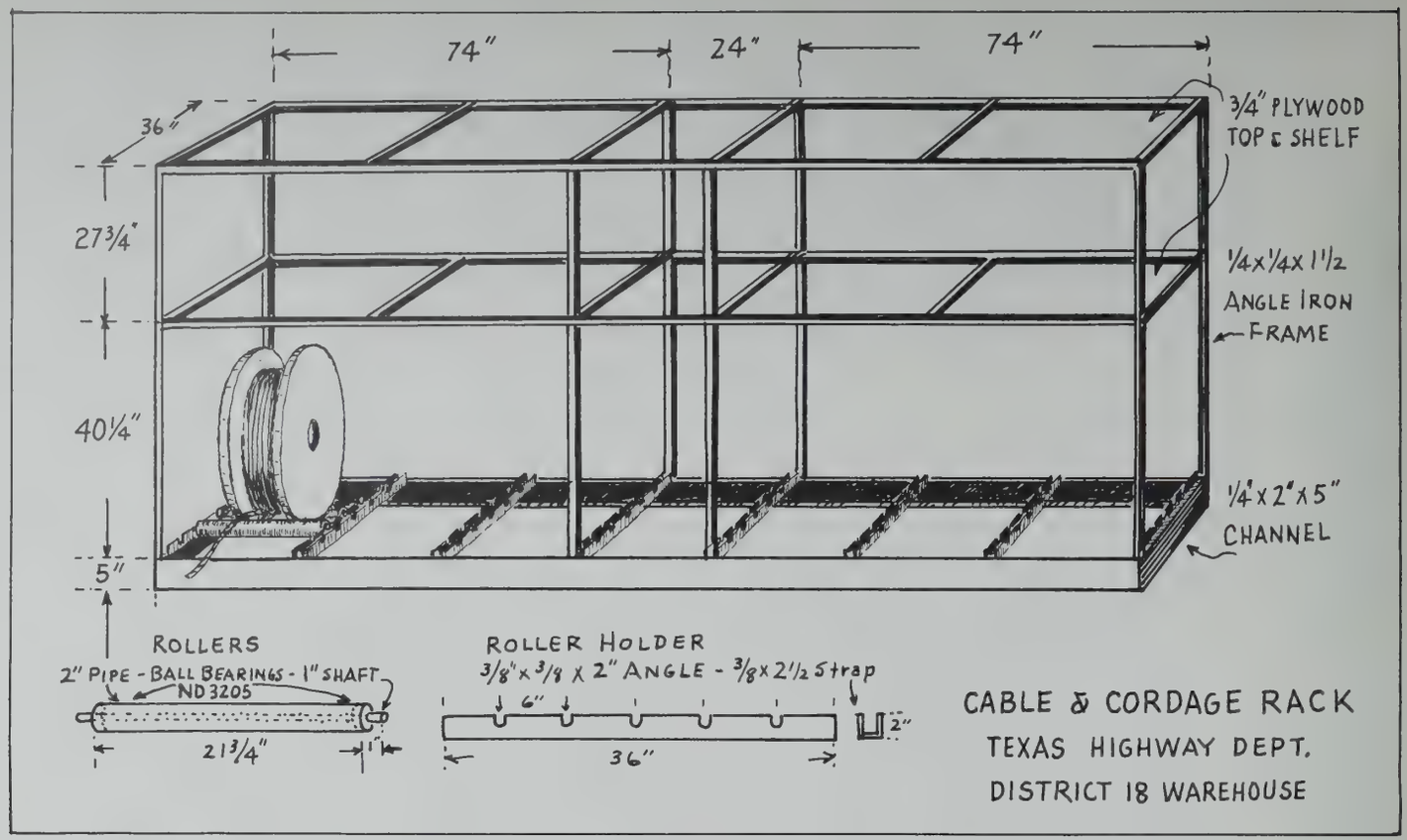
Besides providing a neat storage area for cable and cordage, this rack —designed in the District 18 shop— allows orderly dispensing of cable safely and with no back-breaking labor involved.

The rack, used in the district warehouse, has been very satisfactory. A reel of five-eighths-inch cable weighs about 600 pounds but rolls easily on the pipe rollers. Since the reel bears on two rollers, braking effort is not necessary to stop the reel from turning.

The rack stands against the warehouse wall and the cable can be unrolled down an aisle of the warehouse until the length desired is off. Two plywood shelves above the cable reels are used for storing rope and other items.

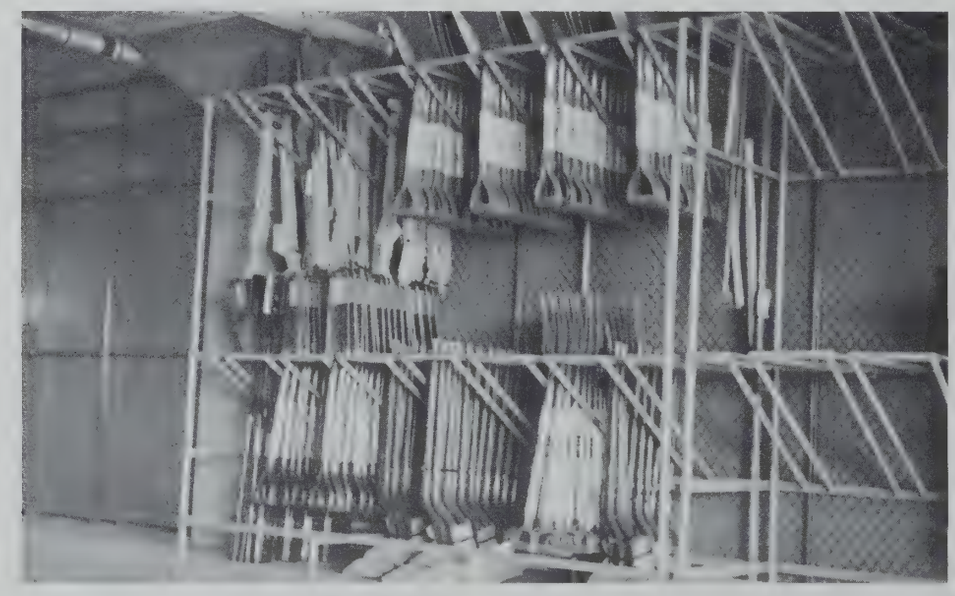






tool storage

This tool rack was also constructed in the district shop for use in the warehouse. It keeps tools off the floor and out of the aisles and they can be easily counted while in the rack.



Mae Adell Roberts, Information Clerk
Information and Statistics Division

The only sure thing about Texas weather is that it is undependable. Nowhere does the weather stick to the rules, and that goes double for Texas weather.

Because of its geographical location, the state, especially the central part, is the scene of an almost constant struggle between the warm air from the Gulf of Mexico and the cooler air coming from the north and from the mountains to the west. There are no rules to determine which will be the winner of any given battle.

A blue norther may come roaring in like an express freight to send temperatures plummeting and push the warm air completely out of the state, playing havoc with the citrus groves and vegetable fields of the Lower Rio Grande Valley. Or the warm air may win out and even Amarillo will have springlike weather in midwinter.

Spring and summer are the rough times. That is when the state really takes a beating. In the spring, the tornadoes take over. Clashes of hot and cold air can bring downpours of rain or they can cause sudden updrafts that turn into funnels.

From 1916 through 1954 there were 666 tornadoes recorded in Texas —about one-tenth of the nation's tornadoes for that period. This year, through March, there have already been 24 tornadoes reported, some touching ground, some not. In 1955, January through March, there were only nine tornadoes reported, and in 1956 for the same period there were also nine. Until the figures for April and May—the big tornado months—are in, it will be impossible to determine if this is the record year it appears. More tornadoes hit between the hours of 4 and 5 in the afternoon than at any other time.

Then come the hurricanes. They may last on into the fall, and the tornadoes may come back. Usually they don't, but they sometimes follow the exception.

Then winter is back and that cold wind coming down from Canada starts banging on our north door again.

Texans always have a lot to talk about weatherwise. They have not, as yet, devised a way to change the weather but they *are* trying to do something about it.

Texas has one of the world's most complete storm-warning systems, with radar warning sets in operation

in sixteen of the state's twenty first-order weather bureaus. The first of its kind, this severe weather warning system is made up of sets operating in Amarillo, Wichita Falls, Fort Worth, Midland, Lubbock, Abilene, San Angelo, Waco, Austin, Port Arthur, Galveston, Houston, Corpus Christi, Victoria, San Antonio, and Brownsville. All stations operate around the clock and are connected by teletype and radio so that any station can alert any other station of a storm traveling in that direction. When this warning is received, the weather bureau in that vicinity notifies all communities in the area.

All of these warnings are dispatched to the communications office of the Department of Public Safety in Austin. This is the nerve center for a state-wide disaster relief setup that is ready to go into action immediately wherever a storm might strike, handling rescue operations, clearing roads, giving first aid, caring for wounded and homeless, and performing countless other necessary tasks.

This relief setup dates from 1951 when the Texas Division of Defense and Disaster Relief was created as a branch of the Executive Department and a state coordinator was appointed. The organization includes a State Defense and Disaster Relief Council made up of a representative of the Red Cross and the heads of eight state departments—the Highway Department, Department of Public Safety, Railroad Commission, State Health Department, Department of Public Welfare, Texas Aeronautics Commission, Fire Insurance Commission, Adjutant General's Department, and Texas Employment Commission. Various employees of the departments serve as representatives of the department heads and work with the disaster relief agency.

Each of these departments also has representatives at the district level. The Disaster Relief Division is divided into sixteen districts with four subdistricts, paralleling the Department of Public Safety's Highway Patrol Districts. The District Engineer is usually district representative for the Highway Department with the Maintenance Engineer serving as his alternate.

When the first warning is issued anywhere in the state, the Governor's office alerts a representative of each department. As long as there is danger that disaster may strike, these representatives remain on round-the-clock shifts—alternating their watch with others in their respective departments—at the State Control Center. This underground center at the Department of Public Safety Building is adjacent to the communications office where messages come in from the districts by teletype, telephone, or radio, sometimes relayed by the Military Amateur Radio Service.

This group had already been standing by for 24 hours when on the morning of April 2, the day of the Dallas tornado, they received a message from the Shreveport Weather Bureau: "Flash. Spotted suspicious echo on scope which believed to have struck Avinger (Texas). 10:30 A.M." The possible storm had been spotted on the Shreveport radar set, part of the southwestern storm warning network in which Louisiana and Oklahoma are cooperating with their limited networks.

A message immediately went out from Austin to the district involved to send a mobile unit to the scene for a report on the situation. Then a message came back from the Avinger area, "No tornado but heavy rain storm."

As the day wore on, the tempo of the messages coming and going increased—reports of more rain storms, of tornadoes, and other reported storms that had not been confirmed. Finally, around 4:30 P.M. came the message that a tornado had hit Dallas. Reports of damages, reported deaths, injuries, confirmed deaths, estimates of still more damages, and other tornadoes in the area followed in rapid succession, giving a picture of the storm as it progressed. District personnel were able to handle the situation so there was no request for assistance. But in Austin, the disaster relief group continued to stand by until danger was passed and all alerts were lifted from the entire area.

This activity is typical of the way this group operates. District personnel handle everything they can at the local level. If they need help, it is asked for through the Austin office; and one of the representatives on hand can immediately send what aid is needed. When the June 1954 flood knocked out Laredo's water supply, after destroying the Pecos River Bridge and Laredo's International Bridge, workers in that district radioed for help. The Highway representative standing by knew that District 15 had just received new water trucks, so he immediately requested them to send ten or twelve trucks, with pumps and the necessary number of men to handle them, to Laredo to haul drinking water. The Health Department rushed thousands upon thousands of typhoid shots to the scene by plane furnished by the Texas Aeronautics Commission.

Each department has definite responsibilities, closely paralleling its normal duties, which are carried out by its employees at local, district, or state level in case of disaster.

The Department of Public Safety is responsible for communications and law and order, preventing rioting and looting. DPS men also assist in rescue operations and give first aid.

The Health Department is in charge of medical supplies, assists in hospitals, and is responsible for tests

to determine whether the water supply is pure. This department provides vaccine, public health knowledge, and emergency nursing to keep down disease.

The Red Cross and Department of Public Welfare handle the feeding, clothing, and housing of victims and refugees when necessary. The Welfare Department also is in charge of relief funds.

Transportation is the responsibility of the Railroad Commission.

The Texas Employment Commission has a place on the Defense and Disaster Council since it would have available a number of specially trained people who could handle certain types of equipment that might be needed in a stricken area.

Fire Commission employees, of course, are responsible for keeping down or controlling fires.

The Highway Department's efforts are generally directed at keeping the roads open and assisting in rescue operations. In most cases it is necessary to clear the roads before rescue operations can begin. Highway Department men also haul food, materials, or heavy equipment when necessary. On a few occasions they have set up portable electric power units. A large percentage of field men are trained in first aid, as are the Public Safety men; and most of them are accustomed to coping with such things as high water and snow.

The Division of Defense and Disaster Relief is also a civil defense agency and would operate in the same way in case of attack in time of a war. The State Control Center has a straight line telephone to Tinker Air Force Base, near Oklahoma City, to bring in the call in case of an air-raid alert. This telephone rings once a day as a test to make certain it is in working condition.

This division was set up as a result of the Federal Defense Act passed in 1950 authorizing the spending of federal money for disaster relief. The Act stipulated that the states must have a civil defense and disaster relief organization in order to receive these federal funds. In 1951 the Texas Legislature passed the Civil Protection Act which provided for civil defense and set up the Division of Defense and Disaster Relief.

A Good Record

At the close of 1956 this sign informed the world that Lufkin was proud of its safety record. Senior Maintenance Foreman W. B. Rudd, of Center, stands beside the sign. Rudd has been with the Department almost 38 years.

AWARDS

Sixty-four Highway Department employees received awards for service totaling 1,730 years at the April 24 Commission Meeting.

There were three 35-year awards made, adding up to 41 such awards. Of this number, 33 employees are still active.

In the 30-year category, twenty awards were presented, bringing the number of employees to receive this award to 279 — 218 of whom are still with the Department.

Forty-one awards for 25 years of service made a total of 794 active employees with 25 years with the Department.

On the front row, left to right, are Thelma
R. A. Bossy, Hartford S. Byrd, C. D. Chambe

Second Row: O. W. Garrett, Max P. Hanz, V
C. C. Pittman, and Fred C. Stanley.

Third Row: Max Templin, R. A. Warnock, D
Frances M. Snodgrass, and Clara A. Stru

Fourth Row: Fred Barber, Harry Bergmann,
M. Delk, Raymond E. Downs, and Carl R. I

Fifth Row: W. I. Hughes, W. H. James, C.
S. A. McComb, and W. K. Morris.

Sixth Row: Tom B. Ralph, H. H. Rankin, H.
Sims, and Arnold B. Staubach.

Seventh Row: W. S. Summy, T. E. Wilson, a

30-YEAR AWARDS

D-11
- Frank B. Crawford, Budget Accountant

District 1
- William M. Heath, Senior Maintenance Superintendent
- Patrick T. Keller, Semi-skilled Laborer

District 2
- R. A. Bossy, District Engineer

District 3
- O. W. Garrett, Senior Maintenance Superintendent
- T. E. Williams, Senior Shop Foreman

District 5
- Fred C. Stanley, Senior Resident Engineer

District 6
- Perry Wagnon, Senior Warehouseman
- Roland A. Warnock, Senior Maintenance Foreman

District 8
- C. C. Pittman, Skilled Laborer

District 9
- R. G. Gilbert, Patrolman

District 10
- J. A. Bell, Skilled Laborer

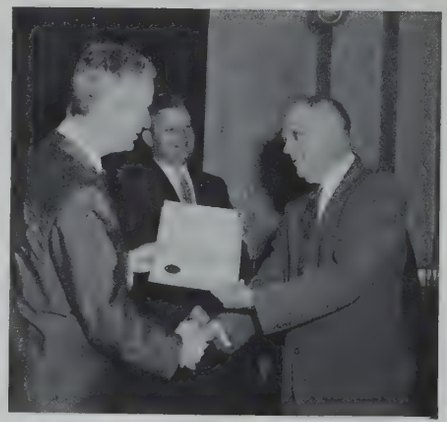
District 13
- Max Templin, Senior Maintenance Foreman

District 14
- W. A. Barnard, Skilled Laborer
- Joe Moreno, Skilled Laborer
- Frank B. Pinget, Equipment Supervisor
- Damon Whitaker, Senior Maintenance Foreman

District 15
- Max P. Hanz, Skilled Laborer

District 19
- C. D. Chambers, Senior Maintenance Foreman

District 25
- H. S. Byrd, Senior Maintenance Foreman



District Engineer A. C. Gentry of Tyler accepts his 35-year service award from Commission members.

35-YEAR AWARDS

Administration	W.
D-11	The
District 10	A.

uz, A. C. Gentry, W. A. Barnard, J. A. Bell,
Frank B. Crawford.
leath, P. T. Keller, Joe Moreno, Frank B. Pinget,
Whitaker, T. E. Williams, Elizabeth G. Friday,
Chapman, D. G. Cooke Sr., C. C. Crook, Floyd
ber, Ted R. Karber, R. L. Lee, Roscoe C. Liles,
inson, S. H. Schnerr, O. B. Seabourn, F. A.
. Wood.

inley, Special Turnpike Engineer
). Kreuz, Accounting Clerk
ıtry, District Engineer

25-YEAR AWARDS

Administration-Houston
- Floyd M. Delk, Supervising Construction Engineer

D-5
- Arnold B. Staubach, Supervising Field Engineer

D-11
- David G. Cooke Sr., Senior Administrative Aide
- Elaine Russell, Machine Operator
- Frances M. Snodgrass, Senior Office Assistant

D-20
- Thomas E. Wilson, Senior Safety Instructor

District 2
- E. E. Chapman, Skilled Laborer

District 3
- W. K. Morris, Utilityman
- Clara A. Strubel, Senior Office Assistant

District 4
- R. C. Liles, Construction Superintendent

District 5
- Carl R. Hart, Senior Resident Engineer

District 8
- C. C. Crook, District Bookkeeper
- S. A. McComb, Senior Maintenance Foreman
- O. B. Seabourn, Senior Equipment Supervisor

District 10
- Fred Barber, Chief Inspector
- H. E. Dearing, Semi-skilled Laborer
- R. L. Lee, Senior Maintenance Foreman

Mrs. Thelma Kreuz receives her award for 35 years employment. She is an Accounting Clerk in D-11.

District 11
- Elizabeth G. Friday, Senior Draftsman
- Tom B. Ralph, Senior Resident Engineer

District 12
- George W. Olson, Skilled Laborer
- H. H. Rankin, Senior Maintenance Foreman
- J. L. Stephenson, Senior Maintenance Foreman

District 13
- L. H. Zitterich, Semi-skilled Laborer

District 14
- S. H. Schnerr, Chief Inspector

District 15
- Harry Bergmann, Senior Party Chief
- R. E. Downs, Skilled Laborer

District 16
- M. G. Yoes, Senior Resident Engineer

District 18
- W. B. Purcell, General Foreman

District 19
- F. A. Sims, District Right of Way Engineer
- C. B. Willis, Skilled Laborer

District 21
- H. O. Robinson, Senior Maintenance Foreman
- Archie L. Wood, Senior Maintenance Foreman

District 22
- H. B. Lazrine, Skilled Laborer
- A. W. Templeton, Semi-skilled Laborer

District 23
- W. H. James, Senior Maintenance Foreman
- W. S. Summy, Senior Maintenance Foreman

District 24
- P. L. Bowman, Senior Designing Engineer
- D. G. Briseno, Skilled Laborer
- C. P. Karber, Senior Maintenance Foreman
- Ted R. Karber, Senior Maintenance Foreman

District 25
- W. I. Hughes, Accountant

Like a fire-breathing dragon, the Snogo chews up the snow and spits it out.

In District 5

That March

John A. Neill, Accountant
District 5

Last month we carried the blizzard story as reported by District 25. The story from District 5 came in too late to use in April, but since springtime blizzards are so unusual in Texas we thought another story this month was in order.

The Panhandle-South Plains region of West Texas has its periodic snowstorms of varying degrees, which are met, outlived, and afterward talked about by its citizenry; but the "big blow" that lashed and howled over some nineteen counties on March 23 and 24 was unique in many respects.

"Worst ever," pronounced the oldtimers; "a record," reported the weather bureau.

Webster defines blizzard as a "severe and prolonged snowstorm; a high wind accompanied by fine snow." That's a complete definition of what occurred in March. The American colonials called such weather a blizz. David Crockett used blizz in the sense of pot shot. Said Davy, "I took a blizz at a big buck and upended him."

That's what happened out here. The weather took a blizz or pot shot at us and almost upended the citizenry.

Officially, winter was over and spring had come when the north wind plunged into the Panhandle and snow showered into the rushing air. Districts 4, 5, and 25 of the Highway Department had made careful preparation for snow emergency, with one exception. Powerful snow removers had been bought and placed strategically. This equipment is engineered to go over the roads and push or blow the snow from the highway surface, regardless of weather—provided the operator is able to see the road. In this instance, the single proviso proved to be a weighty matter. Significance of visibility was quickly shown. However powerful the machine at hand, the operator is helpless if he cannot see. No visibility was the only occurrence not anticipated.

Winds up to 78 miles an hour driving fine, wet snow reduced visibility to almost zero and would not let up. Eyes were of little use except in looking down toward the ground. Many highway employees drove vehicles ten to twenty miles in the storm solely by opening a door and watching the pavement edge, with the door as a shield; and this kind of travel was possible only between drifts across the highways.

These snowdrifts were other phases of the blizzard that contributed to paralyzation of traffic. For some unknown reason the blowing snow would begin to pile up at some particular point. The snow was wet

"Blizz"

The snow showers up as the Snogo starts through on F. M. 145.

enough to cling and pack. Within a short time, at these chosen spots there would be an obstacle that would stop all vehicles with the exception of snowplows. In the northern tier of counties in District 5 these drifts reached a depth of from five to ten feet and were packed hard.

In one particular, District 5 was caught with its defense down. Several pieces of snow-removal equipment from the north part of the district had been brought to the district shop in Lubbock for installation of radio equipment as units in the new radio communications system. Before any of the radios had been attached, the blizzard was howling long and loud. Operators were quickly assigned and the machines were moved to Castro and Swisher Counties. Cars and pickups had been previously equipped with radios, and these sets really paid off in the days to follow.

A partially cleared F. M. 145 in Kress, Swisher County, reveals a snowdrift about ten feet deep.

By Monday morning the snow had stopped, and the winds had abated to allow operators to see well enough to tackle the drifts. By dark the same day every road in the District had been opened, except for two minor F. M. roads.

The railroad underpass on U. S. 87 near Tulia had been completely filled with snow, and clearing it was a big job, as seven cars and trucks were buried under the drift. One of the buried vehicles was a police cruiser which had its brakes set and doors locked before abandonment. The police car had to be skidded from the underpass.

Joe McGowen, Skilled Laborer, with his crew, Wayne W. Jackson and Francis Lawson, rescued fifteen persons—some of them women and children—from drifts nearly eight miles west of Tulia about ten o'clock

On State Highway 86 west of Tulia tired Highway Department men open the road.

State Highway 70 south of Perryton looked like this on March 28 after being cleared of the heavy snow.

A pickup truck follows closely on the heels of the Snogo on S. H. 86. If the Snogo breaks down, it would be a long, cold walk back for the driver.

Sunday night. These employees, like embattled warriors, opened a path from Tulia to the stranded motorists and then had to open a path back to Tulia, as the storm was still raging and piling snow into the old drifts just cut through. Two of the cars occupied by the marooned motorists were out of gasoline and had to be towed to Tulia.

NEW CURBING MACHINE

J. M. Owens, Assistant District Engineer
District 14

With the tremendous increase in traffic since World War II channelization has become increasingly more important to reduce accident potential. Also, it is often desirable to protect signs by constructing islands around them.

District Fourteen has used many methods in providing channelization for the protection of traffic. We have used concrete curb and gutter, which is very expensive; asphaltic concrete, which is difficult to compact and does not lend itself very well to being painted; raised islands of flexible base and asphalt surface with the outline of the island painted; and narrow strips of asphaltic concrete outlining the traffic ways. All of these are expensive, time consuming in construction, and expensive to maintain.

Several months ago we noticed an advertisement in one of the trade magazines showing a curbing machine that professed to place either portland cement concrete curbing or asphaltic concrete curbing rapidly and economically. Upon inquiry we found that the Department (District 15) owned a curbing machine. After seeing the machine in operation, we requisitioned one. So that the several different machines on the market might be tried, D-4 recommended that we try the machine manufactured by Etnyre. The Etnyre machine is considerably heavier than the District 15 Canfield machine, and costs about $200 more. The Etnyre machine cost approximately $1,200.

Both machines work on the same principle. Material is fed through a small hopper to a screw conveyor. This screw conveyor, in turn, forces the material through a curb mold and at the same time forces the machine forward. There are several shapes of curbing molds available for the machines, but we chose the one which we considered the most practical for all uses we might put it to.

After experimentation with portland cement concrete and cold mix asphaltic concrete, we decided to use portland cement concrete for several reasons:

(1) It is very difficult to get a stable curb out of the cold mix asphaltic concrete.
(2) Portland cement concrete curbing retains its shape better and is more stable immediately after placing.
(3) There is not enough difference in cost of materials in the two to make the asphaltic concrete curb more desirable.
(4) Portland cement concrete curbing is easier painted and holds the paint better than asphaltic concrete curbing. It is likely that hot mix asphaltic concrete would make a good stable curb, but hot mix is not readily available to all sections of the District.

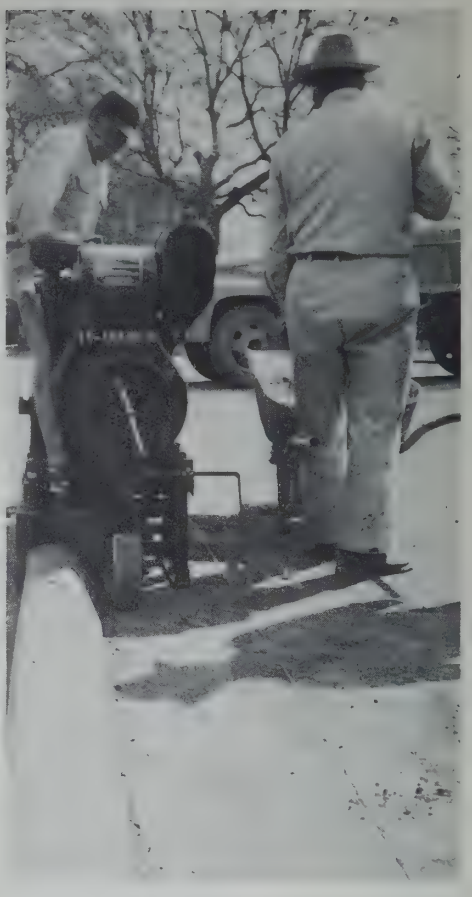
We first tried Class A concrete aggregate but found it too difficult to work and damaging to the machine. We finally designed our batch using fine aggregate for Class A concrete and coarse aggregate composed of 5 per cent Number 5 cover material and 50 per cent Number 10 cover material. All of this material is kept in stock in all sections and is readily available in any part of the District. We use approximately six bags of cement per cubic yard and the batch has a slump of less than two inches.

Preparations get underway for placing curbing.

The first job on which the machine was used consisted of 536 feet of curbing on the grounds of the Blind, Deaf, and Orphan School in Austin. (District 14 does work for Eleemosynary Institutions in Austin.) The actual time of operation in placing this 536 linear feet of curbing was three and one-half hours and the cost, including moving in and out, equipment, labor, and materials, was 36.3 cents per linear foot. We are now curbing an intersection that contains approximately 8,000 linear feet of curbing and we expect the cost to be approximately 25 cents per linear foot.

Desirable equipment for the curbing job includes a curbing machine, concrete mixer, trucks to haul material, wheel barrows, front-end loader or pickup truck to haul concrete from mixer to curbing machine, and hand spray unit for spraying finished curb with curing compound.

We have found that seven or eight men are required to place the curbing in the most economical manner. One man guides the curbing machine. Another shovels the concrete into the hopper. A third sees that the concrete reaches the screw conveyor, one man follows the machine brushing the curbing, one transports the concrete from the mixer to the curbing machine in a front-end loader or pickup truck, and the other three or four men work around the mixer. We have found that the best speed for the curbing machine is about three feet per minute. This speed keeps everyone busy and is just about right for a two-bag concrete mixer.



The man on the right shovels concrete into the hopper as the man on the left guides the Etnyre curbing machine.

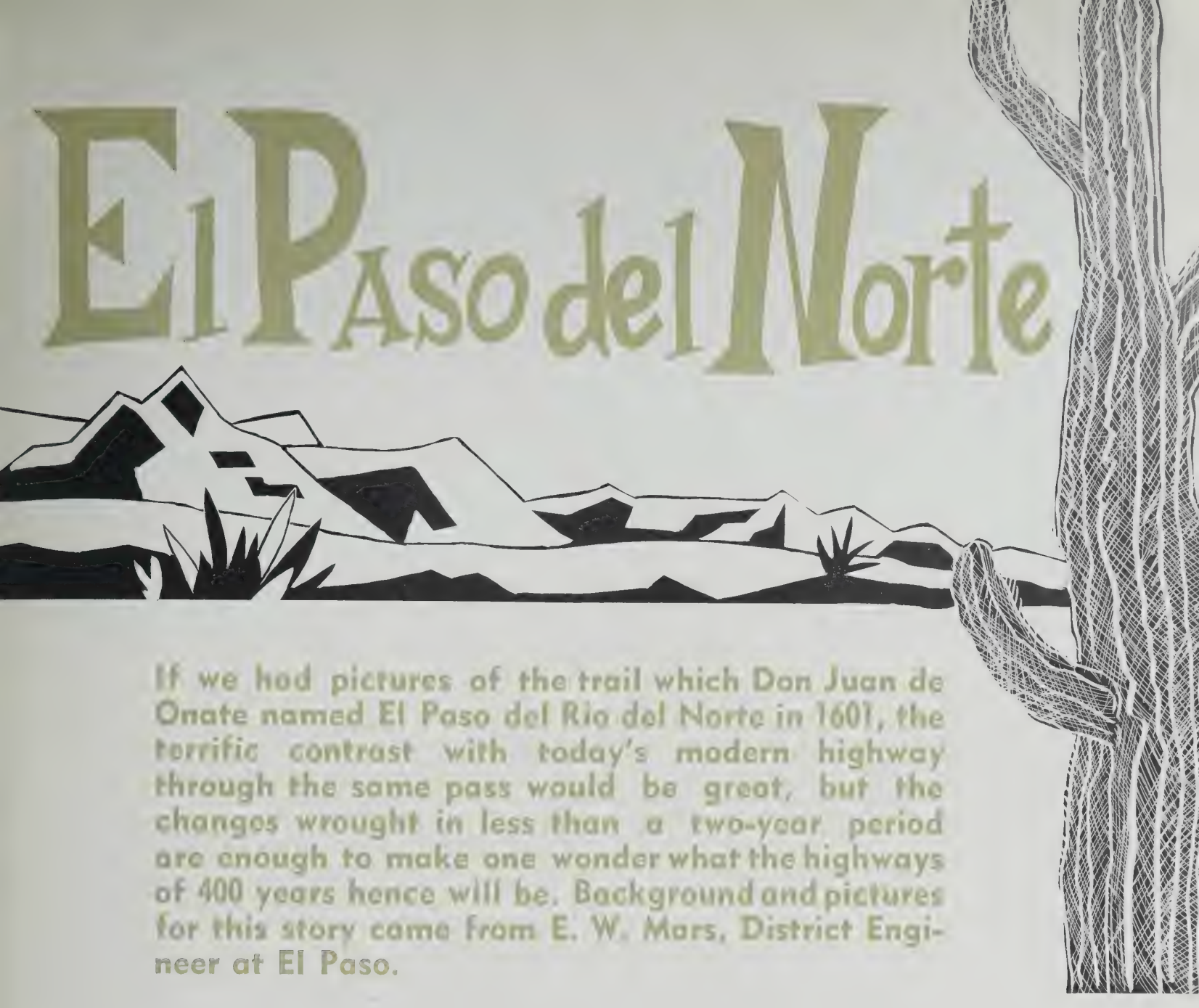
Seven or eight men are needed to place curbing economically.

Finished curbing looks like this on the first job with the new machine.

We were concerned about the lack of dowels to hold the curbing in place. The curbing is placed directly on the asphalt surface and apparently there is a good bond between the aggregate in the asphalt surface and the curbing. Several days ago, after the concrete in the curbing had set up, a vehicle of some type slid into and across two lines of the curbing without knocking it out of line or damaging it in any way. After this experience we have no concern about moving the curbing by vehicles running into it.

We are completely sold on this machine and expect to get very beneficial results from its product.

El Paso del Norte



If we had pictures of the trail which Don Juan de Onate named El Paso del Rio del Norte in 1601, the terrific contrast with today's modern highway through the same pass would be great, but the changes wrought in less than a two-year period are enough to make one wonder what the highways of 400 years hence will be. Background and pictures for this story came from E. W. Mars, District Engineer at El Paso.

One of the most deceiving pots of gold ever man and beast trudged after was the one an Indian slave used as a scheme of trickery to lure treasure-happy white explorers out onto the endless plains of West Texas and the Panhandle. The principal characters in the episode: Francisco Vasquez de Coronado, homeland Spain; and El Turco, homeland Quivira. The year, 1541.

A city large and literally awash with gold—these the meaningful terms in which El Turco described Quivira to Coronado. Enough to start an expedition. However, after the exhausted troop had been obliged to stake a trail with piles of bones and buffalo skulls so even its rear guard would not go astray on the monotonous, trackless Panhandle-Plains and the treasure was still not in sight, there came a time of reckoning. El Turco's plot with resentful Pecos tribes to exhaust the Spaniards and soften them up for an attack was discovered, and the Indian was hastened into the land of eternal sleep. But long afterward, talk of the land of Quivira led men to look for its trail.

Half a century after Coronado's treasure hunt, another Spaniard made the search and really found a Quivira. Only grass huts in a cluster of settlements and redskinned people who lived by the bison they killed were the real Quivira which Don Juan de Onate found in 1601. There was nothing which could even remotely be compared with the gold others of his Spanish countrymen had uncovered in Mexico. He had pushed, it is believed, to Central Kansas. A long trip for so little reward, but the chase of this particular Don Juan afforded compensations of a distinctive sort.

For one thing, when Onate reached the crossing of the Rio Grande on May 4, 1598, handily waiting there to make easy the passage of his entourage through the short narrow gorge was a well-worn trail, pounded, who can guess how many ages, by the feet of Indians, their horses, and the bison so abundant in that partic-

ular region. Cabeza de Vaca, half a century earlier, mentioned the place in his journals. "The cow nation," he called it, "because most of the buffaloes are killed and slaughtered in their neighborhood." Don Juan de Onate was enthusiastic enough over the site to promptly proclaim it the property of King Philip II of Spain and identify it in the vivid speech of Spaniards, "El Paso del Rio del Norte,"—the Pass of the River of the North. This, then, was the lasting effect of one of the Spanish treasure hunts—the endowment of a name which a modern Texas city still wears proudly. And modern transportation, though far removed from the pack trains of horses which a plumed Spanish nobleman led through the Pass with royal pennant waving high, still makes its hurried way along the same route.

Before and after Onate, the trail

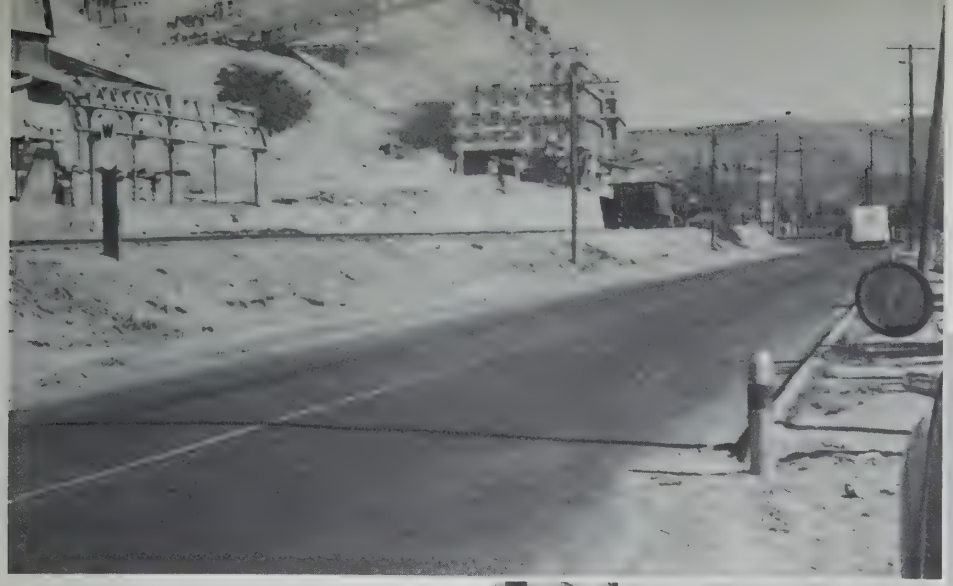
These two pictures were made at approximately the same spot — looking west along the old pavement through the Pass. The first, above, was made in 1954, the new one, below, in 1957.

These before and after pictures were made of the Pass, looking west, as it existed in 1955, above, and as the new pavement looks in 1957, below.

Approaching the Pass from the north presented the view left, in 1955, and right, in 1957.

has been in continuous use—from the stages of primitive trail to oxcart road, wagon road to a four-lane divided highway of 1957. Each evolutionary change in the road was the result of increasing traffic. In the days before 1881, when the Santa Fe Railroad came to the Pass, a wagon road followed the river bed for short distances; and this River Road, as it was known, was but haphazardly maintained. When the Rio Grande flooded, the horse-drawn vehicles of the day were driven up over the Hill Road, an accommodation of sorts which bypassed the gorge which Don Juan de Onate named. In 1898, how-

The view from the south looked like the picture above in 1955, and in 1957, appeared as in the picture below.



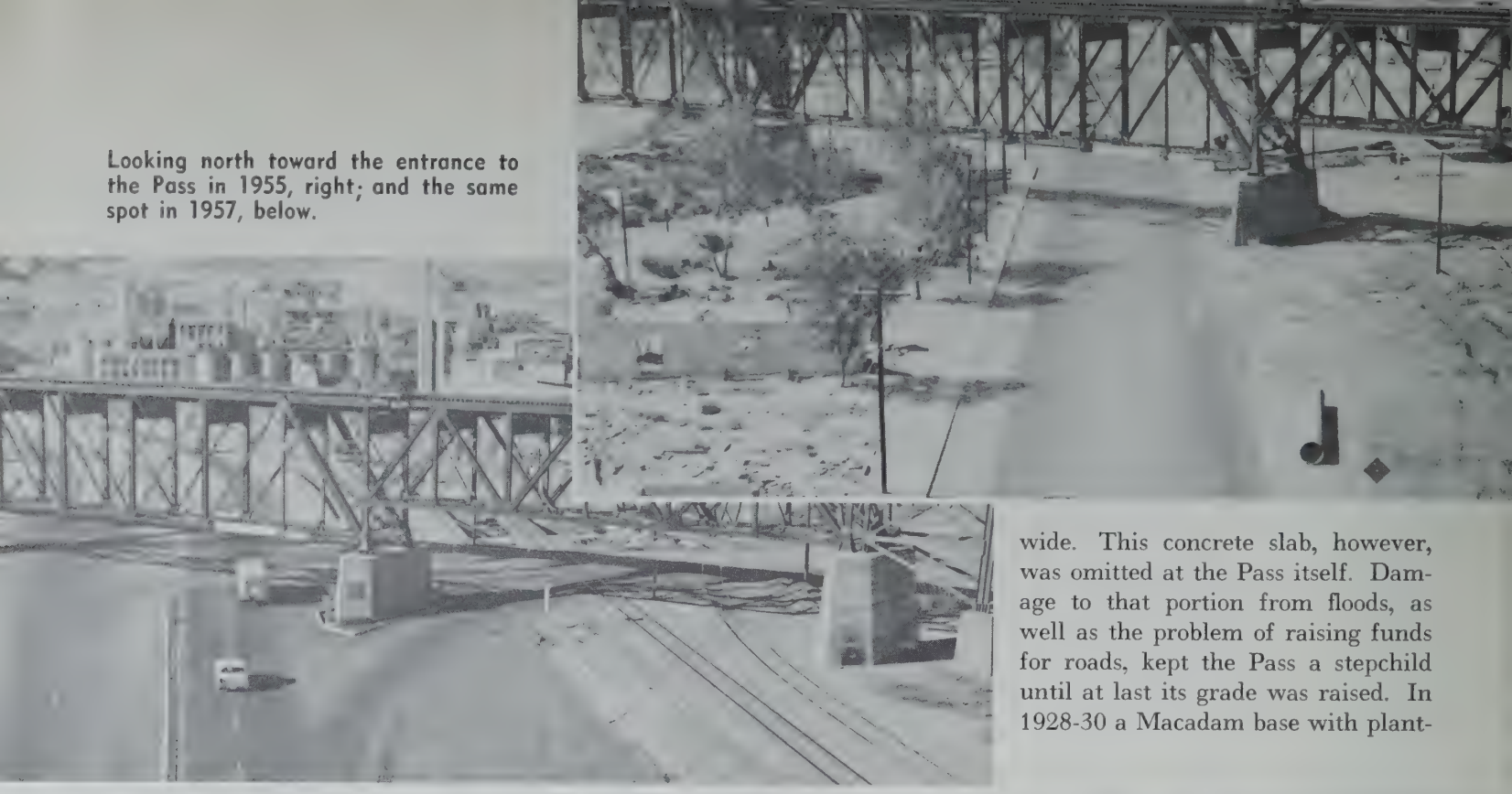
North of the Pass, the picture at left was taken in 1955, the one below in 1957.

ever, El Paso County adopted the road and made its protective custody a reality by spreading upon the road a Macadam base.

Then Henry Ford's invention came into the lives of El Pasoans, and a major change in road thinking came along with it. In 1910 and 1911 the road, including dips into the river bed for short distances, was given the standard road face-lifting of the

Above, looking south from the east end of the Pass in 1955; right, in 1957.

Looking north toward the entrance to the Pass in 1955, right; and the same spot in 1957, below.



wide. This concrete slab, however, was omitted at the Pass itself. Damage to that portion from floods, as well as the problem of raising funds for roads, kept the Pass a stepchild until at last its grade was raised. In 1928-30 a Macadam base with plant-

day—a coating of tar and gravel approximately fourteen feet in width. This represented a major step forward. Until about 1915 the beauty treatment lasted, when it was replaced by a very fashionable new type of road—cement, eighteen feet

Location for these two pictures is one-half mile north of the Pass, looking north. Picture at right was made in 1955, the one below in 1957.

mix surfacing between six-inch concrete curbs 24-feet wide was constructed. The silver anniversary of that road was passed before the latest version—a four-lane divided job—was completed in 1957.

On May 4 the years will have reached 359 since a Spanish Don Juan signified his possessive admiration for what he saw in Texas and tossed out a picturesque name as he followed the lure of Quivira. Gold he found not at the end of his trek; but Quivira for all the ages had lain beneath his feet at El Paso del Norte.

OVER THE HIGHWAYS

Comments . . . from the Traveling Public

● We liked your beautiful, wide, clean countryside made so colorful by the wildflowers. Your people are progressive and friendly and the scenery is magnificent. I'd suggest that more publicity be given to the interesting things to be seen in your fine cities. Each city could send mimeographed lists to your Bureaus.

Would like to suggest that you put up signs at highway entrances warning about road construction. I wasted about one-half day and had to pay for removal of tar from my car. It was a mess. Trucks splashed me.

Ola McLean
Vancouver, British Columbia

● The young lady at the Information Bureau was wonderful, and because of her we stayed a week longer than expected.

New York, New York

■ *A story on the advent of women into the Travel Information Bureaus will appear in TEXAS HIGHWAYS in a future issue. Meanwhile, comments indicate that women are handling very well this job formerly allotted to men only.*

● You have too low a speed limit for the condition of your highways — especially at night.

Eugene, Oregon

● Your good roads are wonderful, and the evidence of more and better ones to come. Cars, mostly with Texas licenses, zoomed past us when we were traveling at or a little beyond the posted speed limits.

Menominee, Michigan

● It was our pleasure to have traveled through the beautiful State of Texas recently on our way to and from the West Coast.

We found your highways well marked with speed and safety signs, which we observed religiously.

We experienced no difficulty, but were aware that the Highway Patrol would come to our assistance should we need them.

Also wish to commend you upon your Travel Information Bureau for the marked routes we received and the courteous manner in which they were given.

Chester W. Hamilton
Elliott, Maryland

● I am interested in obtaining information pertaining to the harvest of vegetation on roadsides for the purpose of feeding livestock.

I have in mind a certain section which has growing on it an abundant stand of clovers which I feel would make excellent livestock feed. I need information on such matters as what type of permit is necessary, fees, limitations, etc.

George Lehnert Jr.
Louise, Texas

■ *Never having thought of what might happen to the vegetation, we checked and found that the Districts work this out with the farmers and that this is not an unusual request at all.*

● We enjoyed your good roads and beautiful roadside parks. We dislike the size of this card, because we need more space for the things we like about your state.

W. L. Allen
Rockingham, North Carolina

● We didn't like the distances between towns without any communication or telephones in an emergency. There should be a telephone every 1,000 feet.

Tucson, Arizona

To and From Our Readers

● During the recent "weather siege" those employees of the Highway Department concerned with gathering and disseminating road conditions came in for many comments of praise — as did our men in the field who kept the highways open or if they could not, managed to keep traffic flowing safely with little tie up.

Dave Cheavens, Associated Press Capitol Bureau Chief, expressed the appreciation of everyone in the Capitol Press Room for the cooperation of the Department. The Mayor of Belton, Roy Sanderford, sent the following letter to James H. Aiken, Expressway Engineer at Waco:

"On behalf of all the people of Belton, I want to thank you, Mr. Collier, and your fine organization for the excellent assistance given the City of Belton the day following the disastrous flood.

"Your Highway crews did more effective work in two days, or less, than we could have accomplished in two months. It is gratifying to have a Department of Government so well organized and trained that it not only carries on its normal functions, but can render outstanding service to various areas of the State when they are in distress.

"Again thanking you for your generous service and thoughtfulness in offering the service, I am,

Sincerely,
Roy Sanderford, Mayor
Belton, Texas"

Most of the credit should go to District Road Condition Reporters. Without them there would have been no information to give out to press and motorists. Congratulations to these men on a job well done.

● After seeing the new format of TEXAS HIGHWAYS I'm thinking of cancelling my subscription to LIFE. Don't need it any more. Your April number came this morning and I've had a time trying to keep people from walking off with it. Congratulations on a beautiful piece of work.

Grant H. Burton
State Health Department
Austin, Texas

After the flood waters receded in Milam County, F. M. 2095 looked like this. Flood damage all over the state will run high when reports from all districts are in.

ABOUT THE COVER

Still under construction, U. S. 80 in Kaufman County is one of many sections of the Interstate Highway System taking shape across the face of our state. Pictures such as this make it a little easier to comprehend what a tremendous undertaking the building of this system of express highways is. A total of 2,905 miles of highways similar to this section of U. S. 80 will stretch across Texas from east to west and north to south when the system is completed, and many of these miles have yet to reach the planning stage. This represents a lot of work — engineering, clerical, construction, and on and on, almost ad infinitum — in getting the roads onto and off the drawing boards. The impact of this road-building program on Texas is outlined in an article on page 2.

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DO YOU KNOW TEXAS?

Gordon Shearer
State Parks Board

On May 19, 1836, occurred the most famous, if not the most tragic, event of the Indians wars in Texas. On that day, Comanche and Kiowa Indians attacked Elder John Parker's cabined fort, erected to protect settlers along the Navasota river.

The fort was taken while most of the men were out working on their nearby farms. A few of the occupants of the fort escaped. Others were killed or carried off by the Indians.

Among the captives was Cynthia Ann Parker, nine years old. For 24 years attempts to trace her were futile. In 1860, Ranger Captain Sul Ross, later to be Governor of Texas, led a foray against the hostile Comanches on the Pease River. Chief Peta Nocona tried to escape on horseback. Behind him rode his squaw with a baby in her arms. Nocona was killed and the woman captured. Lieutenant Tom Kelliher insisted that though she looked like an Indian, the woman was white. She was brought back to East Texas where surviving members of the Parker family lived and her identity was made sure when she responded to her childhood name. Among the Indians she had been given the name of Preloch, and married Chief Nocona. The child, named Prairie Flower, was brought back with her mother. A son, who had escaped with other Indians, became one of the most famous of the Comanches, Chief Quanah Parker. Cynthia Ann Parker lived about ten years after her return. She is buried in Oklahoma beside her famous son.

A replica of the palisaded fort from which Cynthia Ann was kidnaped has been erected on the original site in Old Fort Parker State Park, just off Texas Highway 14, between Mexia and Groesbeck. The replica is authentic, omitting a tall watch tower which stood in the center of the enclosure and appears in contemporary drawings.